BATSE Earth Occultation Observations of Cygnus X-1

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We present observations of the long-term spectral variability of the soft gamma-ray emission (20 keV-1.8 MeV) of Cygnus X-1 obtained by BATSE in 1991-1994. These results have been reanalyzed using the most recent version (V2.0) of the JPL Enhanced BATSE Occultation data analysis Package (EBOP), a description of which is given in a companion paper in this Symposium (Ling et al, 1995, this Workshop). Cygnus X-1 has shown dramatic flux variation of its hard x-ray emission in this period with fluxes varying among the levels seen previously (Ling et al. 1987) by HEAO 3. A new low level reached in January-February 1994 (Paciesas et al. 1994) was several times lower than the lowest (gamma-1) level observed by HEAO 3. In this paper, we present results of the spectral variability associated with the observed flux variations. Specifically, we present spectra obtained by BATSE in selected periods when they can be compared directly with those of OSSE, COMPTEL and SIGMA.

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